

COMPUTER SOFTWARE AND ALGORITHMS FOR SYSTEMS
BIOLOGICALLY LINKED TO CELLULAR PHENOTYPE

ABSTRACT

[0092] An automated method and system for identifying agents capable of eliciting a phenotypic change in a cell-type is provided. The method includes the steps of: providing receptacles in an array; and providing a statistical design including generic factor names, factor levels and experimental runs. The method further includes the steps of utilizing a software program to generate a computer representation of the statistical design by automatically mapping the identities of the agents to the generic factor names, by mapping the concentration or amounts of the agents to the factor levels and by mapping the locations of the receptacles within the array to the experimental runs. The method also includes placing different mixtures of single agents into receptacles in the array based on the computer representation of the statistical design; contacting the placed mixtures with cells; acquiring experimental data from the contacted cells; and utilizing a processor including an algorithm for comparing the acquired data with the statistical design to identify particular agent mixtures or single agents that cause a phenotypic change in the contacted cells.